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COPYRIGHT AND  
RELATED INTELLECTUAL  
PROPERTY LAW

PATENT AGENT  
STEVEN J. SOLOMON

February 27, 2002

## CERTIFICATE

MAR 12 2002

## OF CORRECTION

Commissioner for Patents  
Washington, D.C. 20231

Re: U.S. Patent No. 6,287,704 Issued September 11, 2001

Title: CHROMIUM (VI)-FREE CONVERSION LAYER AND METHOD FOR  
PRODUCING IT

Inventors: Patricia Prekschat, et al.

Our Docket: 31716

Sir:

A Certificate of Correction under 35 U.S.C. 254 is hereby requested to correct Patent Office printing errors in the above-identified patent. Enclosed herewith is a proposed Certificate of Correction (Form No. PTO-1050) for consideration.

It is requested that the Certificate of Correction be completed and mailed at an early date to the undersigned attorney of record.

Respectfully submitted,

By: John P. Murtaugh  
John P. Murtaugh, Reg. No. 34226

JPM/me

Enclosures: Form PTO-1050 in duplicate

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231 on the date indicated below.

John P. Murtaugh

Name of Attorney for Applicant(s)

2-28-02 John P. Murtaugh  
Date Signature of Attorney

**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**

PATENT NO : 6,287,704

Page 1 of 4

DATED : September 11, 2001

INVENTOR(S) : Patricia Preikschat, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Cover Page, Section (54), delete "CHROMATE-FREE CONVERSION LAYER AND PROCESS FOR PRODUCING THE SAME" and insert therefore -CHROMIUM(VI)-FREE CONVERSION LAYER AND METHOD FOR PRODUCING IT-.

On the Cover Page, Section (30), delete "196 15 664" and insert therefor -196 15 664.5-.

On the Cover Page, Section (56) (Other Publications), second reference, line 2, after "London, GB," insert -Class E31,-.

Column 1, delete lines 1, 2 & 3 and insert therefor -CHROMIUM(VI)-FREE CONVERSION LAYER AND METHOD FOR PRODUCING IT-.

Column 2, line 22, delete "1.5. $\mu$ m" and insert therefor -1.5  $\mu$ m-.

Column 3, line 2, delete "protection>100" and insert therefor -protection > 100-.

Column 3, line 58, after "FIG. 4" insert -,-.

Column 4, line 57, delete "layer>1%" and insert therefor -layer > 1%-.

MAILING ADDRESS OF SENDER:

John P. Murtaugh  
Pearne & Gordon LLP  
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Cleveland, Ohio 44114-1484

6,287,704

PATENT NO.

No. of additional copies

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(Also Form PTO-1050)

**UNITED STATES PATENT AND TRADEMARK OFFICE**  
**CERTIFICATE OF CORRECTION**

PATENT NO : 6,287,704  
 DATED : September 11, 2001  
 INVENTOR(S) : Patricia Preikschat, et al.

Page 2 of 4

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

- Column 6, line 61, delete “chromium (III)” and insert therefor –chromium(III)–.
- Column 7, line 18, before “Chromium (III)” begin a new paragraph.
- Column 7, line 51, delete “CrCl<sub>3</sub> .6H<sub>2</sub>O” and insert therefor –CrCl<sub>3</sub> • 6 H<sub>2</sub>O–.
- Column 8, line 42, delete “K<sub>1</sub>” and insert therefor –k<sub>1</sub>–.
- Column 8, line 48, delete “Zn<sup>2+</sup> + xCr<sup>(III)</sup> + yH<sub>2</sub>O → ZnCr<sub>x</sub>O<sub>y</sub> + 2y H<sup>+</sup>” and insert therefor –Zn<sup>2+</sup> + xCr<sup>(III)</sup> + yH<sub>2</sub>O → ZnCr<sub>x</sub>O<sub>y</sub> + 2y H<sup>+</sup>–.
- Column 8, line 51, delete “H<sup>+, Cr(III)</sup>” and insert therefor –H<sup>+</sup>, Cr<sup>(III)</sup>–.
- Column 8, line 54, delete “1/(1+p<sub>1</sub>•m<sub>ZnCrO</sub>)<sup>2</sup>” and insert therefor –1/(1+p<sub>1</sub>•m<sub>ZnCrO</sub>)<sup>2</sup>–.
- Column 8, line 59, delete “k<sub>1</sub> x c<sub>H</sub> + / a + p<sub>1</sub> x m<sub>ZnCrO</sub>)<sup>2</sup> -” and insert therefor –k<sub>1</sub> x c<sub>H</sub> + / (1 + p<sub>1</sub> x m<sub>ZnCrO</sub>)<sup>2</sup>–.
- Column 8, line 60, before “k<sub>2</sub>” insert – – – .
- Column 8, line 60, after “x tanh(p<sub>2</sub> xm<sub>ZnCrO</sub>)” delete – + –.

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**UNITED STATES PATENT AND TRADEMARK OFFICE**  
**CERTIFICATE OF CORRECTION**

PATENT NO : 6,287,704  
 DATED : September 11, 2001  
 INVENTOR(S) : Patricia Preikschat, et al.

Page 3 of 4

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 8, line 61, before " $k_T$ " insert  $-+-$ .

Column 8, line 62, delete "a" and insert therefor  $-(1-$ .

Column 8, line 62, after " $p_1 \times m_{ZnCrO}$ )<sup>2</sup>" delete  $- + -$ .

Column 8, line 63, before " $2yk_2$ " insert  $-+-$ .

Column 8, line 63, delete " $x 3_{H^+}$ " and insert therefor  $-x c_H + -$ .

Column 8, line 63, after " $x \tanh(p_2 \times m_{ZnCrO})$ " delete  $-+-$ .

Column 9, line 2, before " $k_T$ " insert  $-+-$ .

Column 9, line 4, after " $x \tanh(p_2 \times m_{ZnCrO})$ " delete  $- + -$ .

Column 9, line 6, before " $k_T$ " insert  $-+-$ .

Column 9, line 6, delete second occurrence of " $- c_{Cr}^{(III)}$ "

Column 9, line 12, delete " $\tan h(p_2 \cdot m_{ZnCrO})$ " and insert therefor  $-\tanh(p_2 \cdot m_{ZnCrO})-$ .

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO : 6,287,704  
DATED : September 11, 2001  
INVENTOR(S) : Patricia Preikschat, et al.

Page 4 of 4

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 9, line 13, after "reaction II" insert -,-.

Column 9, line 14, delete "tan h" and insert therefor -tanh-.

Column 9, line 29, delete "kj" and insert therefor -kj-.

Column 10, line 60, delete "CrCl<sub>3</sub>.6" and insert therefor -CrCl<sub>3</sub>• 6-.

Column 11, line 12, delete "CrCl<sub>3</sub>.6" and insert therefor -CrCl<sub>3</sub>• 6-.

Column 12, line 2, delete "60 s." and insert therefor -60s-.

Column 12, line 17, delete "60 s." and insert therefor -60s-.

Column 12, line 37-38, delete "chromium (VI)" and insert therefor -chromium(VI)-.

Column 13, line 12, delete "0.00" and insert therefor ".00".

Column 15, line 28, after "O" insert -,-.

MAILING ADDRESS OF SENDER: John P. Murtaugh  
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PATENT NO. 6,287,704

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UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION

PATENT NO. : 6,287,704 B1  
DATED : September 11, 2001  
INVENTOR(S) : Patricia Preikschat et al.

Page 2 of 2

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 9

Lines 2 and 6, before " $k_T$ " insert -- + --.  
Line 4, after "x tanh( $p_2 \times m_{ZnCrO}$ )" delete "+".  
Line 6, delete second occurrence of " $-c_{Cr}^{(III)}$ ".  
Line 12, delete "tan h ( $p_2 \cdot m_{ZnCrO}$ )" and insert therefor -- tanh( $p_2 \cdot m_{ZnCrO}$ ) --.  
Line 13, after "reaction II" insert -- , --.  
Line 14, delete "tan h" and insert therefor -- tanh --.  
Line 29, delete "kj" and insert therefor --  $k_j$  --.

Column 10

Line 60, delete "CrCl<sub>3</sub>.6" and insert therefor -- CrCl<sub>3</sub> • 6 --.

Column 11

Line 12, delete "CrCl<sub>3</sub>.6" and insert therefor -- CrCl<sub>3</sub> • 6 --.

Column 12

Lines 2 and 17, delete "60 s." and insert therefor -- 60s. --.  
Lines 37-38, delete "chromium (VI)" and insert therefor -- chromium(VI) --.

Column 13

Line 12, delete "0.00" and insert therefor -- .00 --.

Column 15

Line 28, after "O" insert -- , --.

Signed and Sealed this

Fifteenth Day of April, 2003



JAMES E. ROGAN  
*Director of the United States Patent and Trademark Office*

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,287,704 B1  
DATED : September 11, 2001  
INVENTOR(S) : Patricia Prekschat et al.

Page 1 of 2

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page, Item [54] and Column 1, lines 1-3,

Delete "**CHROMATE-FREE CONVERSION LAYER AND PROCESS FOR PRODUCING THE SAME**" and insert therefore -- **CHROMIUM (VI)-FREE CONVERSION LAYER AND METHOD FOR PRODUCING IT** --.

Item [56], OTHER PUBLICATIONS, second reference, after "London, GB;" insert  
-- Class E31, --.

Column 2,

Line 22, delete "1.5. $\mu$ m" and insert therefor -- 1.5  $\mu$ m --.

Column 3,

Line 2, delete "protection>100" and insert therefor -- protection > 100 --.

Line 58, after "FIG. 4" insert -- , --.

Column 4,

Line 57, delete "layer>1%" and insert therefor -- layer > 1% --.

Column 6,

Line 61, delete "chromium (III)" and insert therefor -- chromium(III) --.

Column 7,

Line 18, before "Chromium (III)" begin a new paragraph.

Line 51, delete "CrCl<sub>3</sub>.6H<sub>2</sub>O" and insert therefor -- CrCl<sub>3</sub> • 6 H<sub>2</sub>O --.

Column 8,

Line 42, delete "K<sub>1</sub>" and insert therefor -- k<sub>1</sub> --.

Line 48, delete "Zn<sup>2+</sup> + xCr<sup>(III)</sup> + yH<sub>2</sub>O → ZnCr<sub>x</sub>O<sub>y</sub> + 2y H<sup>+</sup>" and insert therefor -- Zn<sup>2+</sup> + xCr<sup>(III)</sup> + yH<sub>2</sub>O → ZnCr<sub>x</sub>O<sub>y</sub> + 2y H<sup>+</sup> --.

Line 51, delete "H<sup>+</sup>, Cr<sup>(III)</sup>" and insert therefor -- H<sup>+</sup>, Cr<sup>(III)</sup> --.

Line 54, delete "1/(1+p<sub>1</sub>•m<sub>ZnCrO</sub>)<sup>2</sup>" and insert therefor -- 1/(1+p<sub>1</sub>•m<sub>ZnCrO</sub>)<sup>2</sup> --.

Line 59, delete "k<sub>1</sub> x c<sub>H</sub> + / a + p<sub>1</sub> x m<sub>ZnCrO</sub>)<sup>2</sup> -" and insert therefor -- k<sub>1</sub> x c<sub>H</sub> + / (1+ p<sub>1</sub> x m<sub>ZnCrO</sub>)<sup>2</sup> --.

Line 60, before "k<sub>2</sub>" insert ---.

Lines 60, after "x tanh(p<sub>2</sub> x m<sub>ZnCrO</sub>)" delete "+".

Line 61, before "k<sub>T</sub>" insert -- + --.

Line 62, delete "a" and insert therefor -- (1 --.

Line 62, after "p<sub>1</sub> x m<sub>ZnCrO</sub>)<sup>2</sup>" delete "+".

Line 63, before "2yk<sub>2</sub>" insert -- + --.

Line 63, delete "x 3<sub>H</sub>," and insert therefor -- xc<sub>H</sub> + --.

Line 63, after "x tanh(p<sub>2</sub> x m<sub>ZnCrO</sub>)" delete "+".